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atcttgcgaa	tatatgtgta	gaaactgccg	gaaatcgctg	tggtattcac	tccagagcga	5580
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 <223> LacZ(/chitobiase Fusion

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 <223> Lac promoter

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 atg acc atg att acg cca agc ttg cat gcc tgc agg tcg act cta gag 166  
 Met Thr Met Ile Thr Pro Ser Leu His Ala Cys Arg Ser Thr Leu Glu  
 1 5 10 15

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 Asp Pro Arg Val Pro Ser Ser Glu Gln Gln Val Val Asn Ser Leu Ala  
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1 5 10 15

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Leu Val Pro Ser Ser Glu Gln Gln Val Val Asn Ser Leu Ala Asp Asn  
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ctt gat atc caa tat gaa gtg tta act aac cat ggt gct aac gaa ggt 144  
Leu Asp Ile Gln Tyr Glu Val Leu Thr Asn His Gly Ala Asn Glu Gly  
35 40 45

ctt gcg tgc caa gat atg ggc gca gaa tgg gct tct tgt aac aaa gta 192  
Leu Ala Cys Gln Asp Met Gly Ala Glu Trp Ala Ser Cys Asn Lys Val  
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Asn Met Thr Leu Val Asn Gln Gly Glu Ala Val Asp Ser Lys Asp Trp  
65 70 75 80

gct att tac ttc cac agc att cgt ctg att ctg gat gtt gac aac gag 288  
Ala Ile Tyr Phe His Ser Ile Arg Leu Ile Leu Asp Val Asp Asn Glu  
85 90 95

cag ttc aaa atc tct cgt gta acg ggt gac cta cat aag cta gaa cca 336  
Gln Phe Lys Ile Ser Arg Val Thr Gly Asp Leu His Lys Leu Glu Pro  
100 105 110

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Thr Asp Lys Phe Asp Gly Phe Ala Ala Gly Glu Glu Val Val Leu Pro  
115 120 125

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Leu Val Gly Glu Tyr Trp Gln Leu Phe Glu Thr Asp Phe Met Pro Gly  
130 135 140

gca ttc gtt tct gct cca aac gca gaa cct aag atg att gct tct cta 480  
Ala Phe Val Ser Ala Pro Asn Ala Glu Pro Lys Met Ile Ala Ser Leu  
145 150 155 160

aat act gaa gat gtt gcg tct ttt gtg acg ggt ctt gaa ggt aac aac 528  
Asn Thr Glu Asp Val Ala Ser Phe Val Thr Gly Leu Glu Gly Asn Asn  
165 170 175

cta aaa cgt aca cca gat gac aac aat gta ttt gca aac gct gtg tct 576  
Leu Lys Arg Thr Pro Asp Asp Asn Asn Val Phe Ala Asn Ala Val Ser  
180 185 190

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gac caa atg gca gcg tac aag atg aac aaa ctt cac ctt cac cta acc Asp Gln Met Ala Ala Tyr Lys Met Asn Lys Leu His Leu His Leu Thr 355 360 365	1104
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Ile Val Ser Asn Pro Asp Tyr Val Tyr Met Asp Met Pro Tyr Glu Val	
660 665 670	
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Arg Lys Met Phe Gly Phe Ala Pro Glu Asn Met Pro Gln Asn Ala Glu	
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Pro Gly Ala Lys Val Glu Asp Gly Lys Leu Ala Met Asn Val Gln Phe	
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Pro Gly Val Thr Leu Gln Tyr Ser Leu Asp Gly Glu Asn Trp Leu Thr	
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Tyr Ala Asp Asn Ala Arg Pro Asn Val Thr Gly Glu Val Phe Ile Arg	
850 855 860	
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865

870

875

880

2643

taa

\*

&lt;210&gt; 19

&lt;211&gt; 880

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; dnaA/Chitobiase Fusion

&lt;400&gt; 19

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Leu Asp Ile Gln Tyr Glu Val Leu Thr Asn His Gly Ala Asn Glu Gly
35          40          45
Leu Ala Cys Gln Asp Met Gly Ala Glu Trp Ala Ser Cys Asn Lys Val
50          55          60
Asn Met Thr Leu Val Asn Gln Gly Glu Ala Val Asp Ser Lys Asp Trp
65          70          75          80
Ala Ile Tyr Phe His Ser Ile Arg Leu Ile Leu Asp Val Asp Asn Glu
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Gln Phe Lys Ile Ser Arg Val Thr Gly Asp Leu His Lys Leu Glu Pro
100         105         110
Thr Asp Lys Phe Asp Gly Phe Ala Ala Gly Glu Glu Val Val Leu Pro
115         120         125
Leu Val Gly Glu Tyr Trp Gln Leu Phe Glu Thr Asp Phe Met Pro Gly
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Asn Thr Glu Asp Val Ala Ser Phe Val Thr Gly Leu Glu Gly Asn Asn
165         170         175
Leu Lys Arg Thr Pro Asp Asp Asn Asn Val Phe Ala Asn Ala Val Ser
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Arg Phe Glu Lys Asn Glu Asp Leu Ala Thr Gln Asp Val Ser Thr Thr
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Leu Leu Pro Thr Pro Met His Val Glu Ala Gly Lys Gly Lys Val Asp
210         215         220
Ile Ala Asp Gly Ile Ala Leu Pro Lys Asp Ala Phe Asp Ala Thr Gln
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Phe Ala Ala Ile Gln Asp Arg Ala Glu Val Val Gly Val Asp Val Arg
245         250         255
Gly Asp Leu Pro Val Ser Ile Thr Val Val Pro Ala Asp Phe Thr Gly
260         265         270
Glu Leu Ala Lys Ser Gly Ala Tyr Glu Met Ser Ile Lys Gly Asp Gly
275         280         285
Ile Val Ile Lys Ala Phe Asp Gln Ala Gly Ala Phe Tyr Ala Val Gln
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Ser Ile Phe Gly Leu Val Asp Ser Gln Asn Ala Asp Ser Leu Pro Gln
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Asn	Pro	Cys	Met	Glu	Ser	Ser	Thr	Arg	Phe	Val	Asp	Lys	Val	Ile	Ser						
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Glu	Val	Ala	Ala	Met	His	Gln	Glu	Ala	Gly	Ala	Pro	Leu	Thr	Thr	Trp						
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His	Phe	Gly	Gly	Asp	Glu	Ala	Lys	Asn	Ile	Lys	Leu	Gly	Ala	Gly	Phe						
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Gln	Asp	Val	Asn	Ala	Glu	Asp	Lys	Val	Ser	Trp	Lys	Gly	Thr	Ile	Asp						
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565										570					575						
Leu	Ile	Thr	Asp	Gly	Thr	Val	Ser	Asp	Phe	Ala	His	Leu	Pro	Ser	His						
580										585					590						
Phe	Ala	Glu	Glu	Val	Ser	Lys	Ile	Val	Ala	Glu	Lys	Gly	Ile	Pro	Asn						
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Phe	Gln	Ala	Trp	Gln	Asp	Gly	Leu	Lys	Tyr	Ser	Asp	Gly	Glu	Lys	Ala						
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Glu	Ala	Lys	Pro	Phe	Tyr	Gly	Leu	Ser	Ala	Gln	Leu	Trp	Ser	Glu	Thr						
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755										760					765						
Lys	Val	Gly	Val	Glu	Tyr	Ser	Gln	Asn	Ser	Asn	Leu	Val	Asp	Lys	Ala						
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Ser	Leu	Asn	Gln	Asp	Tyr	Asn	Arg	Phe	Ala	Asn	Val	Leu	Gly	Gln	Arg						
785										790					795						

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 Pro Gly Val Thr Leu Gln Tyr Ser Leu Asp Gly Glu Asn Trp Leu Thr  
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18

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